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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,272	09/10/2003	Jin-Hee Kim	1567.1054	4031

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STEIN, MCEWEN & BUI, LLP  
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WASHINGTON, DC 20005

EXAMINER
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WEINER, LAURA S

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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12/16/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/658,272

Applicant(s)

KIM ET AL.

Examiner

/Laura S. Weiner/

Art Unit

1795

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-21 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-12 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1-20 (claim 3 has been cancelled) in the reply filed on 8-18-06 is acknowledged. The election of species of additive of Formula (1), (bisphenol A) where R1 and R2 are hydroxyl groups and R3, R4 are methyl groups and a solvent comprising a cyclic carbonate and a linear carbonate is acknowledged. Group II, claim 21 has also been examined. Formula (1) has been found allowable. An additive comprising compound Formula (3) has also been examined.

2. Claims 13-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 8-18-06.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-2, 4-12, 21 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

4. Claims 1, 4-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (7,150,944).

Song et al. teaches in column 2, an electrolyte comprising a non-aqueous carbonate-based solvent and a monomer selected from benzothiophene [formula 3,  $Y_2=S$  and  $R_7=H$ ], etc. The electrolyte is prepared by adding the monomers in 5 wt% or less and preferably less than 2 wt% of the nonaqueous carbonate-based solvent. Song et al. teaches in column 3, that the carbonate solvent can be EC, PC, DEC, DMC, EMC, etc. and the salt can be  $LiBF_4$ ,  $LiPF_6$ , etc. Song et al. teaches in the Examples that the solvent comprises EC, EMC and DEC.

Song et al. discloses the claimed invention teaching a benzothiophene except teaches that the  $R_7$  of Formula (3) consists of hydrogen which has been excluded.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the benzothiophene because one skilled in the art would expect similar chemical structures to exhibit similar properties. *See In re Payne*, 606 f.2d 303, 203 USPQ 245, 254 (CCPA 1979). *See In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) and *see In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991).

5. Claims 1-2, 4-12, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maekawa (JP 2001-015172, translation).

Maekawa teaches on page 6 of translation, that the electrolyte comprises aromatic compounds 0.05-5 wt% of benzofuran [formula 3, Y2=O and R7=H] , benzothiophene [formula 3, Y2=S and R7=H] , etc. The solvent can be PC, EC, DEC, MEC, etc. and a salt such as LiPF6, LiBF4, etc. Maekawa teaches on page 12, that the electrolyte comprises DEC and EC.

Maekawa discloses the claimed invention teaching a benzofuran or a benzothiophene except teaches that the R7 of Formula (3) consists of hydrogen which has been excluded.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the benzofuran or the benzothiophene because one skilled in the art would expect similar chemical structures to exhibit similar properties. *See In re Payne*, 606 f.2d 303, 203 USPQ 245, 254 (CCPA 1979). *See In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) and *see In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991).

### **Conclusion**

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Laura S. Weiner/ whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura S Weiner/  
Primary Examiner  
Art Unit 1795

December 14, 2008